

41. A monoclonal antibody according to claim 40 capable of recognizing at least one of 3 distinct arrays on the prion protein with amino acid sequences according to SEQ ID Nos: 7, 8 and 9.

42. Monoclonal antibodies or fragments thereof capable of binding to prion protein in an antigen-antibody complex which specifically recognize an array on the prion protein with an amino acid sequence according to SEQ ID NO: 5 or SEQ ID NO: 6.

43. A monoclonal antibody according to claim 40 or 42 wherein the prion protein is soluble.

a, 44. A monoclonal antibody according to claim 40 or 42 wherein the prion protein is insoluble.

45. A monoclonal antibody according to claim 40 or 42 wherein the prion protein is a recombinant prion protein

46. A monoclonal antibody according to claim 40 or 42 wherein the prion protein is a protein reduced.

47. A monoclonal antibody according to claim 40 or 42 where in the prion protein is oxidized.

48. A monoclonal antibody which comprises an epitope binding fragment of anyone of the monoclonal antibodies according to claim 41 or 42.

49. A monoclonal antibody according to claim 40 or 42 coupled to other molecules especially fragments of other antibodies, enzymes or organic chemical compounds.

50. An antibody raised against the binding region (idiotype) of the antibodies according to claim 40 or 42.

51. A hybridoma cell line capable of producing a monoclonal antibody according to anyone of claims 40-50.

a, 52. A hybridoma cell line according to claim 51 deposited under DSM.ACC2295 capable of producing a monoclonal antibody which recognizes an array on the prion protein with an amino acid sequence according to SEQ ID NO: 6.

53. A hybridoma cell line according to claim 51 deposited under DSM ACC2296 capable of producing a monoclonal antibody which recognizes an array on the prion protein with an amino acid sequence according to SEQ ID NO: 5.

54. A hybridoma cell line according to claim 51 deposited under DSM ACC2298 capable of producing producing a monoclonal antibody which recognizes 3 distinct arrays on the prion protein with amino acid sequences according to SEQ ID Nos: 7, 8 and 9.

55. A recombinant protein derived from cloned protein-coding sequences from cell lines according to claims 51-54.

56. A recombinant protein according to claim 55 where the protein is expressed in a phage display system or any other system and affinity matured.

57. A recombinant expression vector for the expression of the bovine prion protein.

58. A recombinant expression vector according to claim 57 which is named pbPrP3.

59. The purified recombinant bovine prion protein in reduced or oxidized form or in form of a mixture thereof.

a, 60. A recombinant protein according to claim 59, where the purified recombinant prion protein is from any species.

61. A method for the production of an antibody according to claim 40 or 42, comprising culturing a hybridoma cell line according to claim 51 and isolating the monoclonal antibody from the supernatant.

62. A method for the production of a hybridoma cell according to claim 51, comprising administering to PRP<sup>0/0</sup> mice (knockout mice without a functional PrP gene) an immunizing amount of a prion protein according to claim 59 or 60, removing the spleen from the immunized mice, recovering splenocytes therefrom fusing the latter with a myeloma cell line, growing the fused cells in a selection medium, screening the antibodies in the supernatants of hybridoma cells for binding to native disease-specific and recombinant PR P and isolating the hybridoma cells producing monoclonal antibodies according to claim 40 or 42.

63. A method for the production of antibodies according to claims 40 or 42 comprising administering an immunizing amount of a prior protein according to claim 59 or 21 to PRP<sup>0/0</sup> mice.

64. A method for the production of a hybridoma cell line according to claim 62 where the immunized species is a wild-type mouse, a transgenic mouse or any other wild-type of transgenic species.

65. A method for the production of an expression vector according to claim 57, comprising inserting a DNA coding for the bovine PrP in the correct reading frame into an expression vector.

a 66. A method for the production of a purified bovine PrP protein comprising culturing a microorganism or eukaryotic cell line with an expression vector according to claim 57 in an appropriate culture medium and isolating and purifying the protein.

67. A test kit for the diagnosis of prior diseases comprising one or more monoclonal antibodies according to claims 40 or 42, purified recombinant bovine PrP protein according to claim 21, nitrocellulose sheets, microtiter plates coated or covalently linked with monoclonal antibodies according to claims 40 or 42, an antibody that is coupled with an enzyme and its substrate for a detection reaction, proteinase K, blocking buffer, homogenisation buffer and a detailed description of how to perform the test.

68. A test kit according to claim 67 comprising a nitrocellulose membrane in the dipstick format coated with an antibody according to claims 40 or 42, a dilution buffer, a solution containing an antibody according to claims 40 or 42, coupled to colloids evoking a

colouring reaction when present in an antigen-antibody complex, and a detailed description of how to perform the test.

69. An immunological detection procedure for the detection of disease-specific PrP in biological material of an animal or human comprising treatment of a probe of said material with proteinase K and then with the monoclonal antibody according to claims 40 or 42, detecting the prion protein-antibody complex and analyzing the results.

a 70. An immunological detection procedure according to claim 69 comprising treatment of a probe of said material with the monoclonal antibody according to claim 40 or 42 without prior treatment with proteinase K, detecting the prion protein-antibody complex and analyzing the results.

71. A method according to claim 69 where instead of using monoclonal antibody recombinant prior protein according to claim 60 is used.

72. A pharmaceutical preparation for the therapy and prevention of prion diseases comprising a monoclonal antibody or fragments thereof according to claims 40 or 42 and a pharmaceutical carrier

73. A method for the therapy or prevention of prion diseases comprising administering to a patient suffering from such disease or being likely to becoming a victim of this disease a therapeutical or preventive amount of a monoclonal antibody according to claims 40 or 42.